

## **North American Drought Monitor – October 31, 2005**

**Canada:** Most of British Columbia received near or above average October precipitation, with below average amounts in portions of the northern interior. Above average October precipitation in most of the southern interior eliminated the area classified as abnormally dry (D0). The only station in southern BC to record below average October precipitation was Kelowna, while most other stations received above 120% of average.

Southern Alberta generally received near or above average October precipitation. The area to the north of Edmonton and covering much of the Peace Region received below or well below average monthly precipitation, expanding the area considered abnormally dry (D0). Pockets in the north and central Peace Region continue to experience moderate drought (D1). Several stations in the Peace Region recorded below 40% of average precipitation for the month. In Saskatchewan, 98% of this year's harvest was complete by the end of the month. Wet conditions hampered operations in the northeast, with 48% of reporters rating topsoil moisture as surplus at the end of the month. The southeast region was driest, with only 56% of reporters rating topsoil moisture as adequate. There were no reported drought impacts in Saskatchewan during the month of October. It was reported that combined with economic forces, the dryness of some fields in southwest Manitoba resulted in fewer acres of fall seeded crops, while lack of precipitation in the Central region hindered growth of some winter wheat. Excess soil moisture in the Eastern region hampered grain corn and sunflower harvest operations and impacted many alfalfa fields. An area of abnormally dry (D0) conditions was identified in southeast Saskatchewan and southwest Manitoba. Monthly precipitation across the northern Prairie provinces was quite variable, with Uranium City and Churchill recording well above average while Fort McMurray and Island Lake were well below average.

Most stations in northern Ontario recorded near or above average October precipitation, with the exception of a few stations in the southern most part of the northeast region. Southwest Ontario generally received below average precipitation for the month, grading to near or above average along parts of Lake Ontario and well above average east of Ottawa. The sparse precipitation in the southwest maintained the abnormally dry (D0) conditions in that area.

The province of Quebec generally experienced wet and windy conditions during the month of October, hindering harvest operations and reducing crop quality in some areas. No impacts were reported due to drought, and most crop damage was attributed to heavy rain and strong winds. Well above average October precipitation in the area to the northwest of Quebec City alleviated the abnormally dry (D0) conditions. Some stations in southern Quebec recorded greater than 200% of average October precipitation.

There were no concerns for drought in the Atlantic provinces for the month of October due to heavy monthly precipitation, which alleviated abnormally dry (D0) conditions in Cape Breton. Some stations in New Brunswick and Nova Scotia recorded greater than 200% of average October precipitation.

**United States:** Extraordinarily wet weather across the Northeast and much of the Eastern Seaboard during October vanquished D1 drought and D0 dryness for most of the region with the exception of an area of lingering drought in parts of the Carolinas. In contrast, abnormally dry weather across the lower Mississippi Valley led to some expansion of D0 and D1. Above-normal rain and snow reduced drought area in the Northwest and northern Rockies.

During October 6-9, the interaction between Tropical Storm Tammy near the eastern Gulf Coast and an approaching cold front from the west resulted in an historical deluge up and down the East Coast, with rainfall amounts of 150 mm (6 inches) widespread and isolated totals exceeding 300 mm (1 foot). October 6-8 rainfall totalled 331 mm (13.05 inches) in Wilmington, NC, and Philadelphia recorded 151 mm (5.94 inches) during October 7-8, breaking its 24-hour record for the month of October. A second round of heavy rains hit the mid-Atlantic region and the Northeast a few days later as a subtropical low formed south of Long Island. The additional rain resulted in flooding from North Carolina to New Hampshire. A nor'easter brought still more moisture on October 25-26, with heavy snows hitting some high-elevation areas in the Appalachians. The final monthly totals of 200 to 400 mm (8 to 16 inches, 200 to 400 percent of normal) shattered many October records and a few records for any month. New Jersey, Delaware, New York and every state in New England tallied their wettest October in 111 years of record-keeping. The result was the elimination of D1 and D0 drought and dryness from most of the mid-Atlantic and Northeast. The heavy rains along the Atlantic Coast stymied fieldwork and kept many pastures flooded. An area of lingering D1 and D2 centered in central North Carolina persisted, with low reservoirs a concern.

On October 24, Hurricane Wilma tracked eastward across the southern Florida peninsula, dumping up to 150 mm (6 inches) of rain and ending D0 dryness south of the Tampa area.

While the Northeast and Southeast coastal areas measured more than twice their normal precipitation in October, a large area extending from eastern Texas to western Kentucky and western Tennessee missed out on the moisture this month, seeing under 25 percent of normal rainfall. This resulted in expansion of D0 across the lower Mississippi Valley and D1 into northern Arkansas and over much of eastern Texas. Below-normal rainfall also resulted in D1 intensifying to D2 drought in eastern Kentucky.

Normal to below-normal rain allowed D2 to D3 drought to persist in northern Illinois and vicinity. The dryness this month in the Midwest and Mississippi Valley was favourable for harvest activities but detrimental to pastures and winter crops.

Above-normal rain and snow this month reduced D0 dryness in Colorado and eastern Montana and eliminated D2 drought from Wyoming and most of Montana.

**Mexico:** The early retreat of the summer rainy season in western Mexico in September was followed by fairly dry weather in October. With two dry months in a row, the region

of abnormally dry conditions (D0) continues to expand across western Mexico. The southwest coast of Mexico and western Mexico typically receive appreciable rainfall from Pacific tropical storms, but this season the storms have tracked farther offshore and this has helped to depress late season rainfall totals in this region of Mexico. Dams across northwest Mexico are often filled at the end of the rainy season with these recurring storms which help furnish water for winter agriculture. The extreme southwest coast of Baja California Sur did receive moderate rainfall amounts from Tropical Storm Otis on the 3<sup>rd</sup> and 4<sup>th</sup> of October and this helped to shrink the area of abnormal dryness (D0) in this small region of Baja California.

In northeast Mexico dry conditions had intensified in September, but a series of cold fronts and upper level disturbances brought abundant rainfall (>200% of normal) from northern Chihuahua to Coahuila, Nuevo Leon and much of Tamaulipas. This timely moisture forced the area of abnormally dry conditions (D0) and moderate drought (D1) to shrink with only far northern Tamaulipas and northeast Nuevo Leon still experiencing moderate drought (D1) conditions.

In southeast Mexico tropical cyclone Stan produced abundant rainfall across the Yucatan Peninsula on October 2-3<sup>rd</sup>. On October the 4<sup>th</sup> the system moved into the Mexican States of Veracruz and Oaxaca. Monthly rainfall totals exceeded 200% of normal along and to the right of Stan's track into mainland Mexico with heavy flooding being noted in portions of northern Veracruz and western Oaxaca. Stan developed a large moisture tap across the Pacific slope of Chiapas and this promoted widespread flooding along the Pacific slope of Chiapas and far southeastern Oaxaca. At the end of the month Hurricane Wilma began to move slowly across the Yucatan Peninsula from late on the 20<sup>th</sup> until the 22<sup>nd</sup>. The automatic weather station maintained by the Mexican Navy on Isla Mujeres reported 1,746mm of rain from 0Z on October 20<sup>th</sup> through 18Z on October 22<sup>nd</sup>. SMN derived rainfall estimates from GOES satellite imagery indicate more than 750 mm of precipitation for this three day period but the actual satellite derived totals are truncated at 250 mm per day and thus, rainfall totals across eastern sections of Yucatan were probably well above this level. Despite the nearby effects from tropical cyclones Stan and Wilma, the Mexican states of Tabasco and northern Chiapas reported well below normal rainfall totals for October and this resulted in a small region of agricultural dryness (D0) to develop.